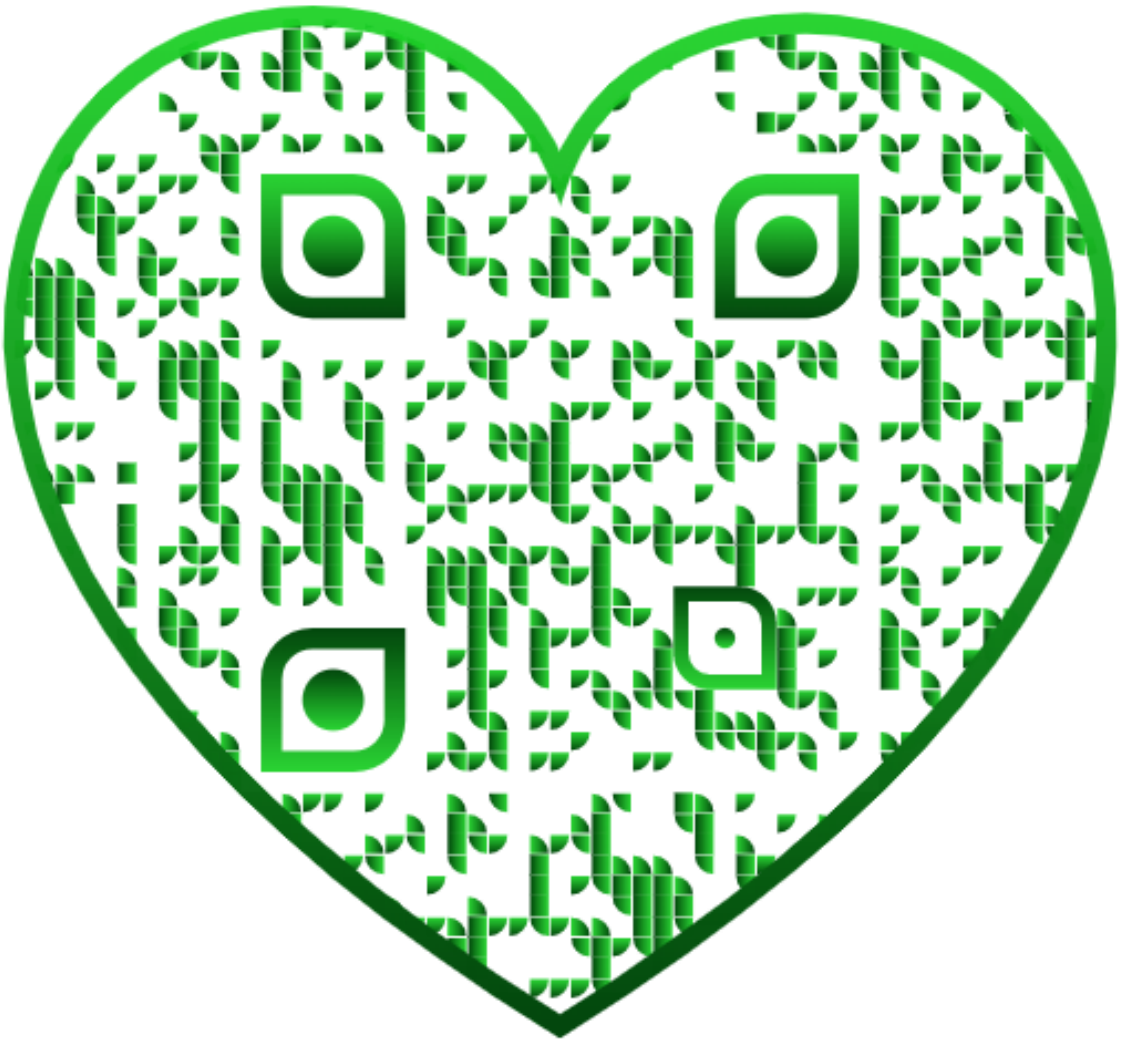
PHARMACOLOGY

lab

المجموعة السادسة

تلخيص دائرة الفارما - المجموعة السادسة -

Group six



ملاحظات هامة: -

-هذه الملخص عبارة عن أغلب كلام الدكتور ممدوح في المعمل ولكن قد لا يغني عن العودة لكتاب الدكتور.

- حسب كلام الدكتور فأن الامتحان سيكون على شكل حالات مرضية ولهذا يجب عليك حسب المعلومات الذي داخل الملخص رسم فكرة عن نوعية الدواء المناسبة وطريقة إعطاءه للمريض.

إعداد دائرة الفارما "المجموعة السادسة" دفعة 35

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LAP 1. DOSAGE FORMS AND SOLID DOSAGE FORM

❖ **Dosage: -** **Are the means by which drug molecules are delivered to sites of action within the body.**

❖ The need for dosage forms:

1) **Accurate dose .**
2) **Protection from gastric juice.**
3) **Masking taste and odour.**
4) **Placement of drugs within body tissues for accommodation the route of placement(administration) into body.**
5) **Sustained release medication & Controlled release medication.**
6) **Optimal drug action for getting optimal drug action**

Oral Dosage forms:

❖ Solid Forms:

1. Powder;

▪ Advantages:-

- **Powders are in form of small particles offer a large surface area and are rapidly dissolved in the GIT tract.**
- **Convenient for large dose.**
- **Easy to swallow even in large bulk.**
- **Quick onset of action.**
- **Small particle size.**
  1) More rapid dissolution.
  2) Increases drug bioavailability.
  3) Decreases gastric irritation

▪ Disadvantages:-

- **Less accuracy in dispensing potent drugs.**
- **Misunderstand the correct method of use.**
- **The masking of unpleasant taste is big problem.**
- **Not suitable for:**
  1. Hygroscopic substances dissolve in humid environment.
  2. Aromatic materials.
- **Not-suitable for drugs that degraded in stomach.**

2. Tablets:

- **A tablet is a hard, compressed medication in round, oval, square shape. Containing unit dose of one or more medication.**
- **Prepared by compression method.**
- **A coating may be applied to:**
  - Hide the taste of the tablet's components by sweeteners or flavors.
  - Make the tablet smoother and easier to swallow by glidants & lubricants.
  - Make it more resistant to the environment by binders.
  - Extending its shelf life.

- **Examples of drugs administered by this route:Bigel**
  - **Plus & Biomol.**

Advantages:-

- **Most stable** and **most convenient** in packaging, shipping and transportation.
- **Accurate**.
- **Cheapest** oral dosage form.
- Can control drug release rate for getting (**rapid** & **slow**) so several tablet types are available.
- Very easy to mask the **taste** and **odour** of bitter active ingredients by coating.
- Provide **accurate dosage** to the patient.
- Easy to divide into **halves** and **quarters**.
- **Lighter** and **compact**.

Disadvantages:-

- Its **manufacturing** involves several unit operation thus at each step there is **loss** of **ingredients** of tablets.
- May be problematic for **children** and **elders** due to **difficulties** in **swallowing**.
- **Slow** absorption.
- Drugs with **poor wetting**, **slow dissolution**.
- Some drugs **resist compression** into dense compact.
- **Hygroscopic** drugs are not suitable for compressed tablet.
- Drugs which are **sensitive** to **oxygen** may require special coat.

3. Buccal and sublingual tablets:

- The medications dissolve rapidly and are absorbed through the mucou
- s membranes of the mouth.
- Avoid the HCL and first passed metabolism.
- **E.g.:** ***Vasodilators, steroidal.***

▪ Advantages:-

- The medication absorbs quickly.
- This drugs **don't** pass though **first pass metabolism.**
- **Reduce** the **side effect** due to low dose and high efficacy.

❖ **Note:**
Rapid absorption due to high vacuolization beneath the tongue

▪ Disadvantages:-

- **Eating**, **drinking**, or **smoking**, can affect how the drug is absorbed how well it works.
- This route is generally considered **unsuitable** for **prolong** administration.
- Any **open sores** in your mouth can also become **irritated** by the medication.

❖ **Note:**
the patient should not smoke while taking sublingual medication because **smoking** causes **vasoconstriction** of the blood vessels.

4. Chewable tablets:

- They are tablets that **chewed prior** to **swallowing**.
- Designed for administration to children (**vitamins**)

▪ Advantages:-

- Looks like **sweets** or **candies** so it's given to **children.**

▪ Disadvantages:-

- Should be Chewed in **mouth** before **swallowing.**

5. Capsules:

- In **gelatin** container.
- **Two types:**

  1) Hard-shelled capsules used for "dry powder ingredients"

  2) soft-shelled capsules used for "oils "
- E.g. "***vitamin E***"

Advantages: -

- Enclose the drugs that have **unpleasant odor** and **taste** in a **tasteless** shell.
- Rapid **release** of **medication** in **stomach**.
- Easy swallowed.
- Economical.
- **Handle** and **carry**.

Disadvantages: -

- Capsules are not suitable container for some drugs like (**hydroalcoholic solutions** and drugs which cause **gastric irritation**)

6. Granules:

- Consisting of **solid**, **dry aggregates** of powder particles.
- Some granules are placed in **tongue** and **swallowed with water**, others are intended to be **dissolved** in water before taking.

Advantages: -

- Rapid **absorption**.
- Masking of **taste** and **smell**.

Disadvantages: -

- Not stable after **dissolution**.

7. Effervescent granules:

- Granules of a varying **size** prepared with **citric acid** and **tartaric acid**.
- E.g. "**Uricol** and **Rani 150**"

8. Lozenge:

sugar + gum

Advantages: -

- East to **compound** and **administer**.
- **Local effect**.
- Has demulcent(soothing) effect on a **sore throat** since ingredients spread **uniformly**.

Disadvantages: -

- Looks like **candy**.
- Precaution with **children**.

9. Pastilles:

- Slowly dissolve in mouth.
- Their bases are either (**glycerol and gelatin**) or (**acacia and sugar**).
- Following teeth extraction.

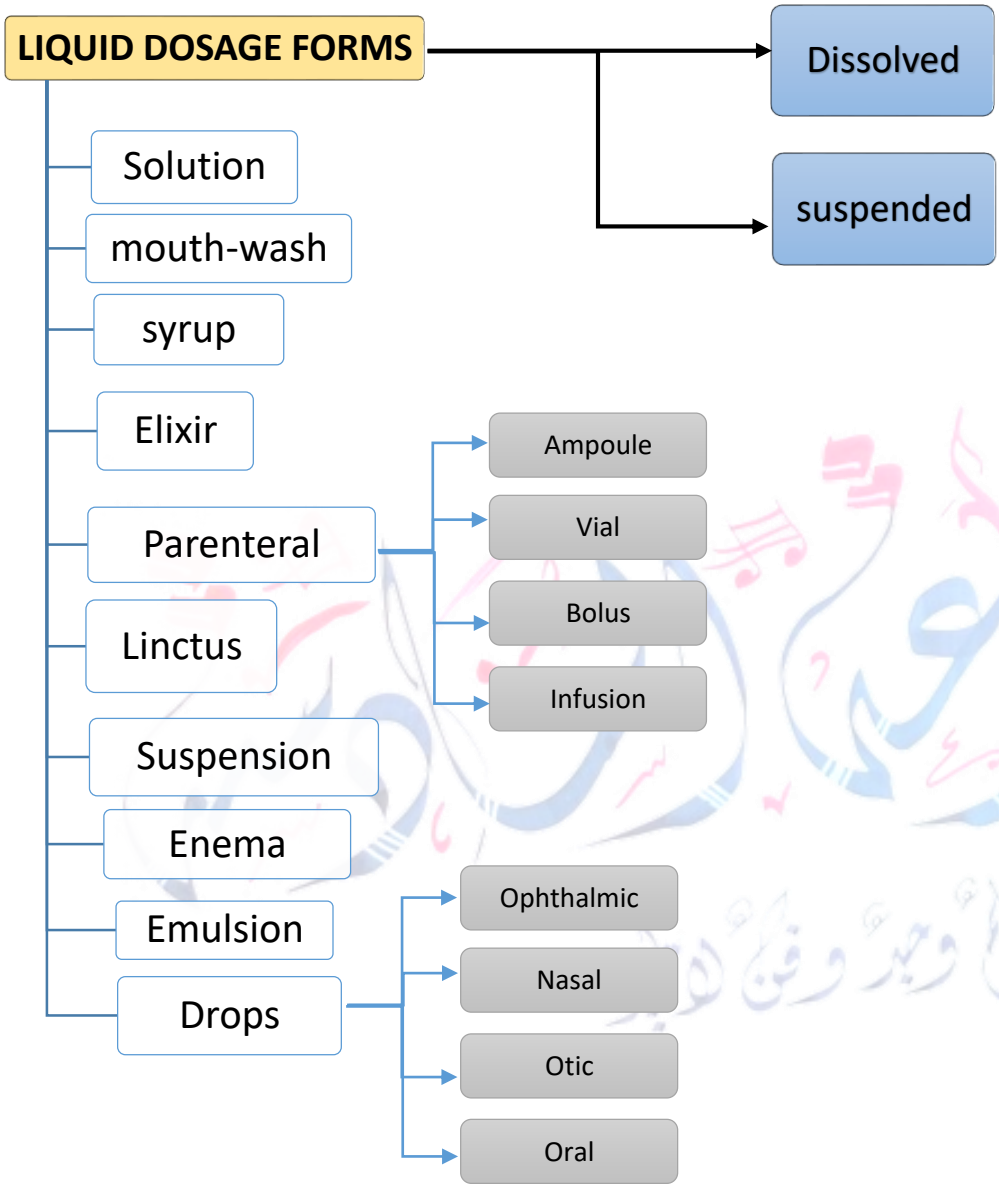
10. Dental cones:

- The cones may contain an antibiotic or antiseptic.

11. Pills:

- Pills are oral dosage forms which consist of **spherical masses**.
- **Rarely** used.

LAP 2. LIQUID DOSAGE FORM



❖ Advantages of liquid dosage form:

- Easy to swallow.
- Rapid effect.
- Can be used in situations and places that can't accept other types of dosage forms.
- Flexibility" a little increase or decrease in the dosage does not make adverse effect".

❖Disadvantages of liquid dosage form:

- Expensive.
- Unstable.
- Short life.
- Difficult to carry-out.
- Difficult to manage the taste and odor.
- There is no need for accurate measurement of the dose such's solid form.

1. Solutions: -

➢ Clear liquid preparation containing one or more active ingredient dissolved in a suitable vehicle.

▪ Advantages:-

- Completely dissolved of the effective substances.
- Homogenous.
- Rapid effect.
- Easy swallowed.

▪ Disadvantages:-

- Expensive.
- Difficult to carry-out
- Difficult to manage the taste and odor.

2. Syrup:-

➢ Concentrated aqueous solution of a sugar

▪ Advantages:-

- 85% of its content is sugar thus it's appropriate for children "good taste".
- Stable "due to its high viscosity.

▪ Disadvantages:-

- Not used for diabetic patients.
- Recrystallization of sugar "may occur at low temperature".

❖ **Note:-** we can use this form just for one month after opening the cap. "antibiotic just for 14 days"

3. Elixir:-

d

➢ Pleasantly flavored clear liquid oral preparation for potent or nauseous drugs. (Syrup + Alcohol)

▪ Advantages:-

- Alcohol is used as dissolvent for substances that can't dissolve in the water.
- Highly stable.
- Anti-septic.

▪ Disadvantages:-

- It's contraindication with hepatic pt.
- May cause neurologic defect in children.
- Not used any more.

❖ **Note:-**the percentage alcohol rang 4% ⟶ 18%.

4. Linctus:

➢ Viscous, liquid oral preparations used for relief cough.
Syrup + Glycerol 5ml

▪ Advantages:-

- Demulcent effect.
- Low toxicity.
- Stable "due to high viscosity".
- Long duration.

❖ **Note:** specifically used for cough " only "eg. Cafseed 5ml.

5. Suspension: -

➢ liquid preparations for oral use containing one or more active ingredient dissolved in a suitable vehicle.

▪ Advantages:-

- Used for substances that can't dissolve in water and may complication with alcohol.
- Management of taste and odor.

▪ Disadvantages:-

Not homogenous so, it:-

- Sediment.
- Aggregate in solid form "cracking
- Requirement for shaking before usage.
- Short life "one week" and unstable.

❖ **Note:-**the effective substances not completely dissolved due to presence of suspended agent.

6. Emulsion:-

Oil + Water

▪ Advantages: -

- It's mostly used in preparation of vitamins in liquid D.F.
- The taste and odor of oil can be managed but not for effective substances e.g. Vitamins.

❖ **Note:** we can use effective substances that can dissolve in water or companied with oil.

▪ Disadvantages:-

- The most type that liable to contamination" presence of more water".
- Shaking before usage.
- Creaming "formation of oily layer from above'…(patient may take high dose, due to the effective substances attach to the oil).
- Precipitation at the bottom of the bottle.

7. Mouth-wash:-

➢ Similar to gargles but are used for oral hygiene and to treat infections of the mouth.

- **Advantages:-**
  - Used as anti-septic for cleaning the mouth, but not for throat.
- **Disadvantages:-**
  - May cause irritation.
  - May be swallowed.

8. Drops:-

1ml= 20 drops

I. Ophthalmic drops:-

- The D.F may be solution, suspension or emulsion.
- Must be sterilized " not use after 28 day after opening "
- May contain preserved substances.
- High viscosity " to stay for longer time and not remove easily"
- May cause irritation.

❖ **Note:- A.** It mostly appropriate with newly born baby and is more accurate for getting the wanted effect.
B. The ophthalmic drops is expensive which, is a disadventages charcter.

II. Oral drops:- For new born babies and have high potency.

III. Nasal drops:- low viscosity.

IV. Otic drops:-high viscosity(by adding **glycerol**). "does not allow the drops from getting out easily"

9. Parenteral:-

I. Ampoule:

➢ Small sealed vial used to preserve a sample "liquid or solid

- **Advantages:-**
  - More accurate dose.
  - Easy to use, but not for self-administration.
  - Use for single use.
- **Disadvantages:-**
  - Expensive.
  - Easy to fracture.

II. Vial:-

➢ Small glass or plastic bottle used to store medications as "liquids, powder, capsules"

Advantages" multiple usage"

III. Bolse:-

- Single dose e.g. Paracetamol 100ml.
- Rapid and more effective pathway than other solid dosage forms.

IV. Infusion:-

➢ Dilute solution of the readily soluble constituents of crude drugs.

- **Administration → I.V**
- **Dose → 400-500ml**
- **advantage → can mix other drugs within it.**

10. Enema:-

- It is a liquid injected to the rectum "400-500 ml"
- Present in tow forms: **A.** Retention. **B.** Evacuation.
- Has local effect.
- **Disadvantages:** **A.** Uncomfortable. **B.** need specialist.

❖ Dousches:

- It's a device that has squeezable bottle design, which help to push water into body cavity "by putting the medication solution inside water, then mix well, after that push the mixture to appropriate part of the body.
- **Usage :-** cleaning and washing.

❖ **Note:- Lotion** :-

A. used locally.

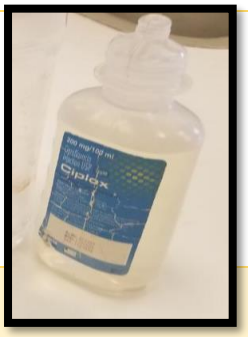
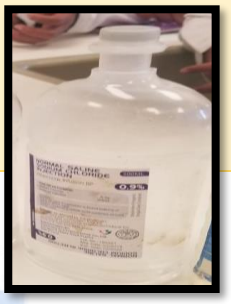
B. has widely distribution effect.

C. can't use outside the home "not allowed to leave home while the lotion still on the skin surface."

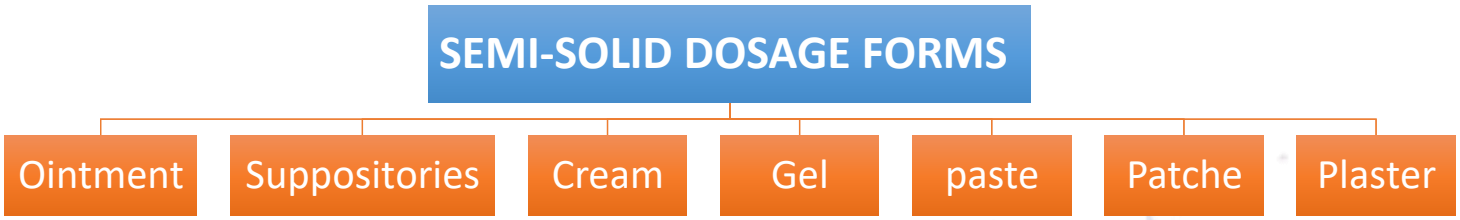
The report

NAME	D.F	ADVENTGAES AND DISADVENTAGES	PICTURE
RHIMX	Drops “nasal”	low viscosity	
Amol	Drops “oral”	For new born babies and with have high potency.	
FARCOZOL	Suspension	**Advantages:-** Management of taste and odor. **Disadvantages:-** -Sedimentation. -Aggregation in solid form “cracking	
FARCONCIL	Emulsion	**Advantages:-** It’s mostly used in preparation of vitamins in liquid D.F. **Disadvantages:-** The most type that liable to contamination” presence of more water”.	
adol	Syrup	**Advantages:-** Stable “due to its high viscosity. **Disadvantages:-** Not used for diabetic patients.	

TOT'HEMA	Ampule "oral"	**Advantages:-** -More accurate dose. -Use for single use. **Disadvantages:-** -Expensive. -Easy to fracture	
VITA FOLIC	Vial	**Advantages**" multiple usage"	
DOVERIN	Ampule	**Advantages:-** -More accurate dose. -Use for single use. **Disadvantages:-** -Expensive. -Easy to fracture	
Cefotaxime	Vial	**Advantages**" multiple usage" **As mentioned Previously…..** **"كما ذكر سابقا"**	
DECADRALE	Vial		
Calcio 20	Emulsion	**As mentioned Previously…..** **"كما ذكر سابقا"**	

Ciplox	Infusion	-Administration “I.V” -Dose “400-500ml” -advantage “can mix other drugs within it.”	
NORMAL SALINE “SODIUM CHLORIDE”			
RINGER LACTATE	Infusion	As mentioned Previously….. "كما ذكر سابقا"	
CALAMYL	Lotion	-used locally. -has widely distribution effect. -can’t use outside the home “not allowed to leave home while the lotion still on the skin surface.”	

LAP3. SEMI-SOLID DOSAGE FORM



❖ **Usage: -** Topically on skin and mucous membrane of the nose and mouth.

➢ **Topically: -**

A. Local

B. Systemic "the effective substances is absorbed to circulation.

1. Ointment:-

- It is **greasy** preparation.
- The base that carry the effective substances is **Fat.**
- The effective substance may be already **dissolve** or not "may come as **powder**".
- It forms a barrier on the skin surface which makes an **emollient** effect, when it melts at body temperature…the effective substances release and its action start.

Advantages:-

- Stable "low water content".
- Long duration.
- Avoid first pass metabolism.
- Easy to use.

Disadvantages:-

- Need massage, when it uses.
- Not used for sensitive area e.g. **Face.**
- Not used during day and under sunlight because it may cause **dark spots.**
- Difficult to wash.

❖ **Note:** the area where the ointment is used should be clean.

Alfacort
"Ointment"

2. Cream:-

OIL+WATER "EMULSION"

- Low viscosity and less stability "less greasy preparation".
- Less greasy **"low fat"**
- Easy to remove "by wash"
- Can be used on the face and during the day.

❖ **Note:** If the drug is not homogenous that means, it shows two layers, it can't be used anymore.

DERMATIN
"Cream"

3. Gel:-

- Polymeric complex ⟶ Base is **liquid "water"**
- Rapid absorption at the skin surface.
- Easier to wash than cream and ointment.

BALCAINE
"Gel"

4. Paste:-

- It is an ointment, but is
  A. Insoluble "high powder content"
  B. Stiffness "steady layer".
- Has emollient effect "it forms a barrier that prevent water to get out".
- Not melt at body temperature, so it has: - **A.** Long duration of action.

❖ **Note:** That means, the effective substance not completely dissolved.

Apsol
"Paste"

5. Patches: -

➢ **Semi-solid D.F used to control the releasing of drug e.g. Nicotine and Nitroglycerin patches.**

▪ Advantages: -

- Easy to use.
- Comfortable.
- Can use with patient who not cooperated in usage of other types of D.F.
- Suitable for psychiatric patients which refuse treatment.

▪ Disadvantages: -

- Low dose.
- Expensive.
- May cause irritation.

Nexcare
"Patch"

6. Plaster: -

▪ Advantages: -

- Local usage "for protection or mechanical support"

▪ Disadvantages: -

- May cause irritation.

ASSURE

"Plaster"

7. Suppositories: -

- **Steps of action → melting → dispersion → either affect :**
  - **A.** Locally
  - **B.** Systemically

  "depending patient need"
- **Types: - Rectal or vaginal.**

▪ Advantages: -

- Avoid first passage metabolism.
- Avoid passage through gastric juice.
- It is used locally as antifungal to avoid the systemic effect of the drug.

▪ Disadvantages: -

- Uncomfortable.
- May cause irritation.
- Difficult of administration "may loss part of the dose".
- Need appropriate temperature for good storage condition.

ADOL

" Suppositories (Rectal)"

MONICURE

" Suppositories (Vaginal)"

8. Gaseous: -

❖ **Note:** each push or compression "equals **50 micron**".

- Could be local, or systemic.
- Base is **Gas.**
- The drug arises under effect the pressure of the gas.

Advantages: -

- Not easily contaminated "there is no direct contact with the drug".
- Easy to carry.
- Rapid absorption and onset of action.

Disadvantages: -

- The bottle may be broken "explosion" at high temperature.
- May cause irritation in case of the organic gases such's propane and methane.

Foracort

" Gaseous"

Ventolin

" Gaseous"

LAP 4. ROUTE OF DRUG ADMINSTRATION

❖ Characters should be present in the route of administration: -

A. Safe.
B. Reach the site of action.
C. Reach the site of action in an effective dose.

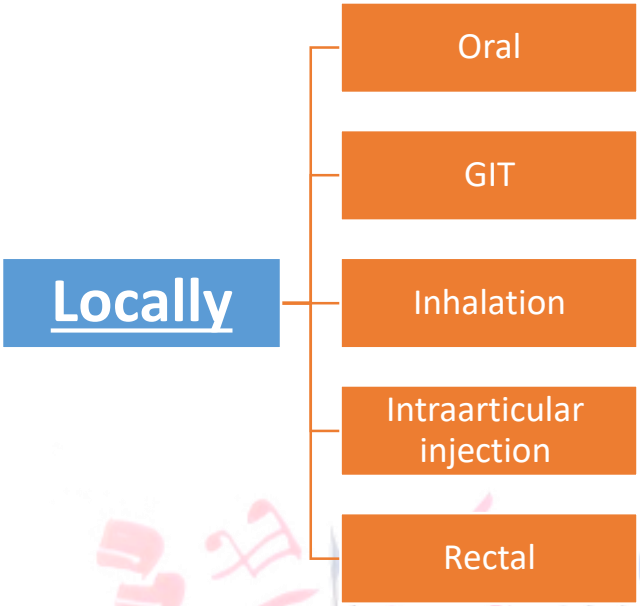
❖ Factors that determine the appropriate route of administration:

A. Emergency" **I.V, inhalation, sublingual**" or chronic diseases" **oral, transdermal**". ⟶ ❖ Depending on the compliance of the patient.

B. Site of action.
C. Age.
D. Characteristic of the drug" **solubility, molecular weight**".
E. The desire of the patient.

A.Locally

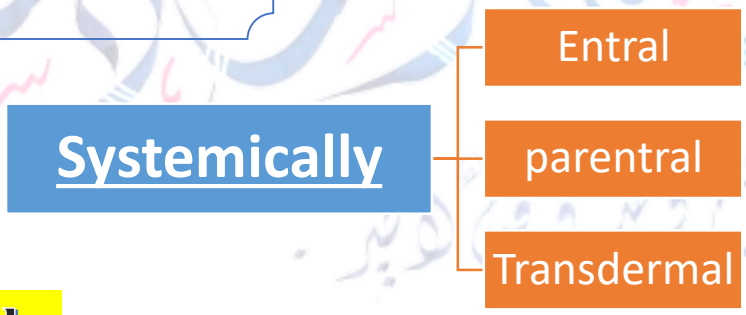
- The drugs are applied topically to the skin and mucous membrane for desired action.
- Don't reach the blood circulation, so minimal systemic side effects.



Advantages: -

- **Safe.**
- **Easy to use.**
- **Not absorbed but act locally on the epithelial surface.**

B.Systemically



1.Enteral:-

a. Oral

- **Note:** it is used in chronic diseases.

Advantages: -

- Safe.
- Not expensive.
- Can be self-administrated.

Disadvantages: -

- Not used in emergency.
- May cause irritation.
- Affected by food and gastric acidity.
- Undergoes first pass metabolism.
- Late onset of action"**≥90 min**"
- Not suitable for emergency and vomiting state.

b. Sublingual

❖ **Note:** the drugs of this way should be "**lipid-soluble**"

▪ Advantages: -

- Fast onset of action.
- Safe.
- Easily eliminated.
- Not affected by **food** or **PH** "PH is natural"
- Avoid first passage metabolism.

▪ Disadvantages: -

- Small dose.
- Bad tasty.
- May cause irritation.
- Part of the dose may be swallowed.

c. Rectal

❖ **Enema** or **Suppositories**

▪ Advantages: -

- Can be used with coma patient.
- Not undergoes first passage metabolism.
- Avoid breakdown by **HCL**.

▪ Disadvantages: -

- Uncomfortable.
- May cause irritation.
- Not benefit with diarrheic patient.

2.Parenteral:-

❖ **Note:** routes of administration other than enteral route are called **parenteral routes**.

a. Injections

- Types of injections "**I.V**, **I.M**, **S.C**, **I.D** (rarely)"

I.V

❖ "**Intravenous**" this drug should be water soluble

▪ Advantages: -

- Used in emergency "rapid onset and short duration" and for fluid supply.
- Give **100%** of drug efficacy.
- It's a better way for irritant drug

▪ Disadvantages: -

- Highly risk.
- Not suitable for oilly and suspension drug administration.

I.M Intramuscular

Advantages: -

- Control the duration of drug action which could be "**fast** or **depot**".
- Rapid onset of action and long duration.

Disadvantages: -

- Pain.
- May cause nerve injury.
- Need help for administration "not self-administration".
- The needle may be broken during muscle spasm.
- Need sterilization.

S.C Subcutaneous

Advantages: -

- Control the duration and action of the drug.
- Suspension drugs can be used "such as **Insulin**".
- Slow release of drug.
- Used for implantation form of drug "such as **contraceptive drug**".

Disadvantages: -

- May cause necrosis.
- Pain.
- Irritation.

b. Inhalation

Advantages: -

- Rapid onset action.
- Low toxicity" **small dose**".
- Accurate dose.

Disadvantages: -

- Irritation.
- Difficult of usage.

3.Transdermal:-

❖ **Note:** should be **lipid soluble**.

- The drug is administrated in form of **patch** or **ointment**. **E.g**. Nitroglycerin patch.

▪ Advantages: -

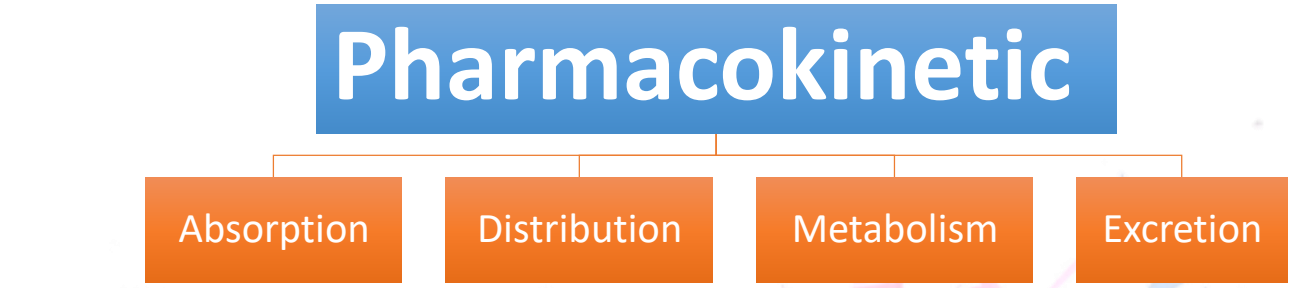
- Slow onset of action.
- Comfortable.
- Safe.
- Long duration.

▪ Disadvantages: -

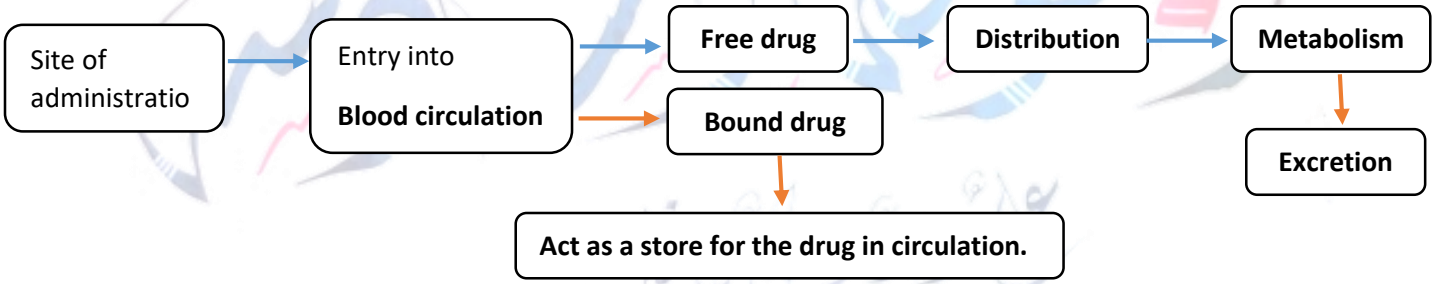
- irritation.
- Patches may fall-off unnoticed.

LAP 5. PHARMACOKINETIC

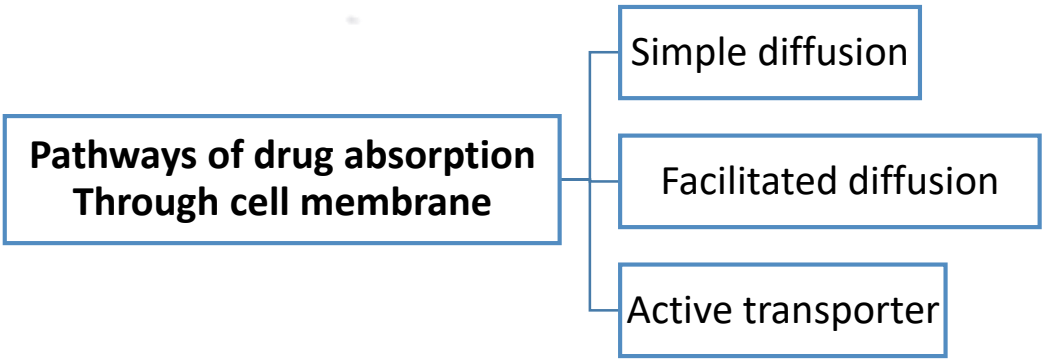
❖ **pharmacokinetic: -** it's the movement of the drug in the body.



❖ Mechanism of pharmacokinetic of the drug:



1. Absorption;



A. Simple diffusion:

depnding on the
- Solubality **"water soluble"**
- Concentration gradient "**directly proportion**"
- Surface area "**directly proportion**"
- Molecular weight "**Small M.W pass faster**"

B. Facilitated diffusion:

- It need carrier on the cell membrane.
- The absorption of the drug is limited due to" the saturation of the carrier in presence of e.g. food or other drugs, which compete for the carrier.

C. Active transporter:

- It's the movement from low to high concentration.
- It need **"carrier + energy(ATP)"**
- The absorption of the drug is limited.

❖ Factors affect absorption of the drug:

▪ Related to patient:

1) **Rout of administration.**
2) **Health state.**
   a) The circulation.
   b) Malabsorption.
   c) Cessation a part of the GIT.
3) **Decrease the surface area.**
4) **Presence of some kinds of food with certain drugs that lead to inhibit absorption of drugs**
   a) **ca^{2+}** presence in milk form a complex with e.g. " **tetra-cyclic** which not be absorbed.
   b) **Theophylline** presence in **tea** "red tea" that inhibit absorption of **iron**.
5) **Diarrhea "short duration (time) for the drug to stay in the intestine.**

▪ Related to the drug:

1) **Molecular Wight.**
2) **Solubility.**
3) **PH**
   - **Ionized "not absorbed".**
   - **Non-ionized "absorbed"**

2. Distribution:

1. Intra-cellular:

- Low **M.W.**
- Lipid soluble.

2. Extra-cellular:

a) Intra-vascular:

- Large **M.W.**

b) Interstitial:

- Low **M.W.**
- Water soluble.

❖ **Note:** **"Bound drug"** it's proteins that bound to a part of the drug. These proteins have a higher affinity to some drugs than others **e.g. Aspirin** when bound to a protein that carry **Warfarin** that lead to release the **Warfarin** and increase its metabolism.

3. Metabolism:

- **Liver** is the main site of metabolism.
- **A biotransformation** occurs as following:

  - Inactive → Active
  - Lipid-soluble → water-soluble
  - Unionized → Ionized

❖ Factors affect metabolism of the drug:

1) Hepatic enzymes.

- **Inducer** "increase the metabolism and breakdown of the drug so, we need to increase the dose.
- **Inhibitor** "decrease the metabolism and the drug stay for longer time so, we need to decrease the dose.

2) Liver disease.

3) Age.

4) Race.

4. Excretion:

- **Removal** of drug outside the body.
- it's **indicator** of healthy state of kidney and liver.
- The major routes of excretion "**Liver, kidney, GIT**"

EXPERIMENT

Absorption and Excretion of Aspirin

❖ Purpose from the experiment:

Observation the concentration of Salicylate "Aspirin" in urine.

❖ Components of experiment:

- Standard.
- Sample "urine".
- Aspirin "tablet".

❖ **Note:**
Aspirin transform into **Salicylate acid** within body.

❖ Procedure " Steps":

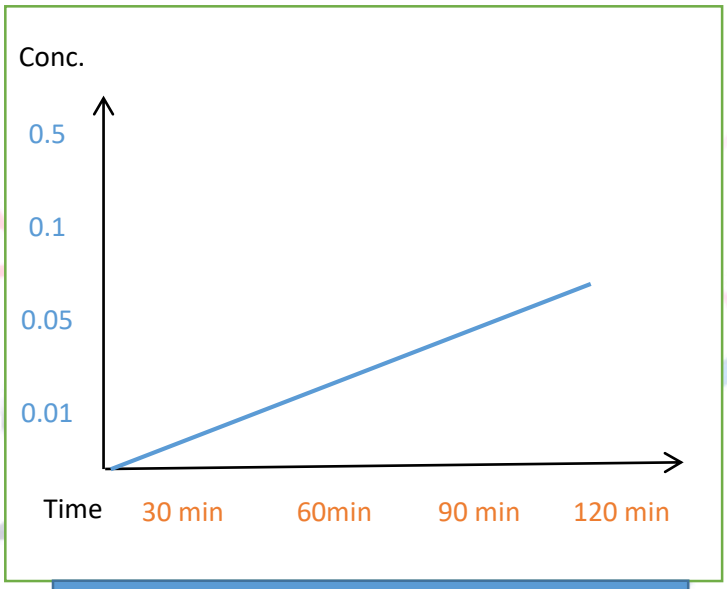
1. We give a student a table of **Aspirin.**
2. Collect a sample "urine" from the student at **(30 minutes' intervals)** with addition of **5 drops of ferric chloride** to the sample "urine".
3. Preparation of standard by using standard Aspirin solution"**0.01, 0.05, 0.1, 0.5**" % With addition of **2 drops of ferric chloride** to each of standard above.
4. Compare the color that obtained from the sample after adding ferric chloride, with the standard.
5. List the result in the chart.

Sample after 30 minutes "tolerance"

Sample after 60 minutes "0.01"

❖ The Report:

Time	Conc. in urine
30 minutes	Zero “tolerance”
60 minutes	0.01
90 minutes	0.05



Conc. Of Salicylate in urine (30 min intervals)

نماذج

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Sauna'a University

Faculty of medicine and healthy sciences

Final exam of practical pharmacology for 3rd level students 25 September 2018

Chose the correct answer of all following

1- Which of following is correct about rational steps of rational prescription writing

A- Date writing. B- signature. C- make specific diagnosis. D- all of above

2- All of following are correct about rational steps of rational prescription writing except

A- Determination of therapeutic objective. C- selection the drug of choice

B- should be written by ink. D- determination dose regimen

3- Which of following not of prescription elements

A- Study of pathophysiology of disease . C- body of prescription

B- Identity of prescriper. D- all of above

4- The body of prescription include of

A- Name of drugs & strength . C- the symbol R_x .

B- Directions to the patient . D- all of above .

5- The abbreviate that means twice daily is

A- t.i.d. B- q.i.d. C- b.i.d. D- s.o.s.

6- Which of following is not correct about rational use of medicine (the drug must be ....

A- Appropriate to clinical need . C- for short period of time.

B- In adequate doses. D- at lowest cost.

7- Selection of the proper drug is based on

A- Safety. B- efficacy. C- suitability. D- all of above

8- If the adult dose of azithromycine is 500mg once a day , therefore the accurate dose of a 2 years child is accurate dose .

A- 100mg once daily . C- 72mg once daily.

B- 150mg once daily . D- non of above

9- The accurate dose of azithromycine for a child has $0.2m^2$ as body surface area is

A- 80mg once daily . C- 50mg once daily.

B- 59mg once daily. D- 35mg once daily.

10- All of following patients require dose modification except

A- Patients who administrate drug with narrow therapeutic index e.g thyeophylline

B- Children and old patients

C- Patients with GIT problems

D- Patients with renal problems

11- Which of following has no effect on drug absorption

A- Gender (sex)
C- ionization
B- Rout of administration.
D- presence of other drugs

12- Which of following will be rapid excreted
A- Ionized & lipid soluble
C- ionized & water soluble
B- Non ionized & water soluble
D- non of the above

13- All of following are correct about metabolism except
A- It convert the drug from active to non active
B- Its mechanisms is weak in child and old people
C- Liver disease decrease the metabolism
D- Phase 1 called detoxification phase

14- Which of following not from first line antihypertensive drugs
A- B-blocker. B- Hydrochlorothiazide. C- ARB. D- ACEI

15- Dry cough may result from using
A- Ca^{++} channel blocker B- ARB. C- ACEI. D- B-blocker

16- Hypoglycemia may result from using:
A- Ca^{++} channel blocker B- ARB. C- ACEI. D- B-blocker

17- Hyperglycemia may result from using:
A- Hydrochlorothiazide.
C- Verapamil
B- propranolol.
D- Nifedipine

18- All can be used for hypertensive asthmatic patient except
A- Nifedipine B- Losartan. C- Frusemide D- Propranolol

19- Which of the following is contraindicated for hyperlipidemic hypertensive patient
A- Hydrochlorothiazide B- Verapamil C- Lisinopril. D- Losartan

20- All can be used for pregnant hypertensive patient except
A- methydopa. B- Hydralazine. C- Lapetalol. D- Lisinopril

21- For patient suffering from hypokalemia the best antihypertensive drug is
A- Frusemide .
C- Hydrochlorothiazide
B- Losartan .
D- Acetazolamide

22- All may cause reflex tachycardia except
A- Nifedipine . B- Verapamil . C- Hydralazine D- Nitroglycerin

23- Hypothyroidism always treated with
A- Thionamides. B- radioiodine. C- levothyroxine. D- all of above

24- Radioiodine contraindicated in
A- Pregnancy. B- children. C- old patients. D- both A & B

25- The anti-thyroid drug that used with pregnant patient is
A- Carbimazole. B- PTU . C- Thionamides. D- non of abov

A

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Sana'a University
Faculty of Medicine and Health Sciences
Pharmacology Department

Time allowed : 30 min
Date: 25 July 2018

3rd level Medicine students, Mid. year Exam of Practical Pharmacology

Select the proper (suitable) rout of administration and dosage forms for the following cases

An infant suffering from severe diarrhea , vomiting and fever how can you give him anti pyretic drugs

1	Rout	A- oral	B- rectal	C- I.v	D- nasal
2	Dosage form	A- vial or ampule	B- syrup	C- suppositories	D-tablet

A young women suffering from acne on her face treated by antiacne agent

3	Rout	A- oral	B- topical	C- I.v	D- S.c
4	Dosage form	A- capsule	B- ointment	C- cream	D- loution

A patient suffering from hypertension, how he can administrate anti hypertension drugs

5	Rout	A- oral	B- topical	C- parenteral	D- sub lingual
6	Dosage form	A- syrup	B- capsule	C- emulation	D- tablet

A diabetic patient suffering from cough , how he can take anticough drug

7	Rout	A- topical	B- oral	C- I.v	D- S.C
8	Dosage form	A- suspension	B- syrup	C- elixir	D- capsule

A diabetic patient treated by Long duration insulin (mixture insulin) how he can take insulin

9	Rout	A- I.v	B- I.M	C- oral	D- S.C
10	Dosage form	A- suspension	B- elixir	C- solution	D- both A & B

A comatose patient

11	Rout	A- inhalation	B- oral	C- I.v	D- rectal
12	Dosage form	A- ampule	B- vial	C- infusion	D- all of above

A patient suffering from skin rash all over the body, how he can take anti allergic drug

13	Rout	A- topical	B- oral	C- parenteral	D- vaginal
14	Dosage form	A- spray	B- cream	C- loution	D- drops

A women suffering from vaginal thrash, how she can take antifungal drugs

15	Rout	A- topical	B- nasal	C- parenteral	D- vaginal
16	Dosage form	A- vial or ampule	B- syrup	C- suppositories	D-tablet

A

A children of 8 year old suffering from colic, how he can take anti colic drug

17	Rout	A- inhalation	B- oral	C- nasal	D- rectal
18	Dosage form	A- suspension	B- emulation	C- spray	D- syrup

A patient with influenza and suffering from congestion , how he can take decongestant drugs

19	Rout	A- inhalation	B- oral	C- nasal	D- rectal
20	Dosage form	A- suspension	B- spray	C- drops	D- both B & C

An uncooperative psychotic patient, how he can take anti psychotic drugs

21	Rout	A- inhalation	B- oral	C- I.M	D- rectal
22	Dosage form	A- ampule	B- spray	C- infusion	D- all of above

A patient suffering from acute asthmatic attack , how he can take bronchodilators

23	Rout	A- inhalation	B- oral	C- I.M	D- rectal
24	Dosage form	A- ampule	B- spray	C- infusion	D- all of above

A children has sore throat, how he can take antibiotic e.g augmentine

25	Rout	A- oral	B- topical	C- parenteral	D- sub lingual
26	Dosage form	A- syrup	B- suspension	C- emulation	D- tablet

A children suffering from fever and vomiting , how he can take anti pyretic drugs

27	Rout	A- topical	B- nasal	C- parenteral	D- rectal
28	Dosage form	A- vial or ampule	B- syrup	C- suppositories	D-tablet

A patient suffering from general weakness and need to take a food supplement (vitamins , minerals ....etc), how he can take it

29	Rout	A- oral	B- topical	C- I.v	D- S.c
30	Dosage form	A- capsule	B- tablet	C- syrup	D- loution

Good luck

1-all of the following are correct about needed to dosage forms except
a-to accurate dose
b-to insert the drug to body cavities
(c)-to decrease the price
d-to conveinent the patient

2-masking of bad odor and taste is big problem of—D F
a- tablets
(b)- solutions
c- capsules
d- creams

3- difficulty of swallowing is big problem in —D F
(a)- tablets
b- solutions
c- spray
d- drops

4-which of following is suitable. D F for infant patients
a- tablets
b- solutions
c- capsules
(d)- drops

5-usually anticough products are prepared as—D. F
a- suspension
(b)- syrup
c- spray
d- repared

6- which of the following D F is suitable for treatment awide area of the skin
a- ointments
b- gel
(c)- lotions
d- creams

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7- which of following D F is sutable for children
a- effervescent
b- syrup
c- shawable tab
(d)- all of above

8 - all of following are correct about choice of the rout of administration
a- emergency state
b- acute or chronic disease
(c)- cost or price
d- age of patient

9- the rout of choice in chronic disease should be
(a)- convenient for patient
b- rapid effect
c- short duration of action
d- all of above

10-the rout of choice in acute attack should be
a- convenient for patient
b- long duration of action
(c)- rapid effect
d- all of above

11-which of following rout required cooperation of patient
a- parenteral
(b)- oral
c- topical
d- all of above

12- all of following are correct about i.v rout except
a- high risk
(b)- use solutions or emulsion or suspension
c- suitable for irritant drugs
d- causes allergy

13- drug to administered as transdermal patches should be
a- water soluble
(b)- lipid soluble
c- low potency
d- all of above

14- which of following is more flexible D F
a- tablets
b- capsules
(c)- syrups
d- all of above

15- the patients should be not smoke while taking sublingual tablet because
a- smoking increase toxicity
b- smoking destroy the medicine
(c)- smoking decrease absorption
d- all of above

16- which of following D F is suitable to insertion of large volume into the rectal
a- suppositories
(b)- enema
c- infusion
d- all of above

17- to increase excreted the drug should be
a- unionized &water soluble
(b)- ionized & water soluble
c- ionized &lipid soluble
d- all af above

18- all of followings can effect oral absorption except
a- presence of food
b- solubility of drug
(c)- liver disease
d- PH

19- which of following D F is suitable to administration of sunblock
a- lotions
b- ointments
(c)- creams
d- all of above

20- which of following D F not suitable for children
a- creams
(b)- elixir
c- suspension
d- non of above

الموضوع السادس
علم وجد وفن لا ينكر .